



Iowa Seat Belt Use Survey 2015 Data Collection Methodology Report

September 9, 2015

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Introduction

In an effort to achieve greater consistency and comparability in state-wide seat belt use reporting, the National Highway Traffic Safety Administration (NHTSA) issued new requirements in 2011 for observing and reporting future seat belt use. The requirements included the involvement of a qualified statistician in the sampling and weighting portions of the process as well as a variety of operational details.

The Iowa Governor's Traffic Safety Bureau contracted with Iowa State University's Survey & Behavioral Research Services (SBRS) in 2011 to develop the study design and data collection plan for the State of Iowa annual survey that would meet the new requirements of the NHTSA. A seat belt survey plan for Iowa was developed by SBRS with statistical expertise provided by Zhengyuan Zhu, Ph.D., Associate Professor of Statistics at Iowa State University and Director of the Center for Survey Statistics and Methodology. The plan was approved by NHTSA on March 19, 2012.

2015 Data Collection

The Iowa GTSB has contracted with SBRS on an annual basis to conduct the seat belt use data collection using the newly approved plan beginning in 2012. On July 1, 2015, SBRS became the Survey Research Services unit of the Center for Survey Statistics and Methodology. The primary contact at the Iowa GTSB is Mark Nagel, Occupant Protection Coordinator. The primary contacts at CSSM are Shirley Huck, former SBRS Assistant Director, and Janice Larson, Survey Unit Director. The CSSM Project Manager for 2015 is Jody Fox. This report describes the data collection process for obtaining 2015 seat belt use data as stipulated by the approved study design. It also includes tables with overall results showing seat belt use in Iowa.

Preparation

Preparation for the 2015 seat belt use data collection involved several components: verifying the usability of the sampled sites, revising materials for Data Collectors, and notifying appropriate local personnel prior to data collection.

Site Verification.

The Iowa Seat Belt Survey Plan includes 75 sites sampled for annual observation, with 5 sites in each of 15 sampled counties. The sites are identified by MSLINK numbers. CSSM has worked with staff from *InTrans*, the Iowa State University Institute of Transportation, to obtain data and photographic resources that allowed staff to examine each site for accessibility, safety, and practicality.

The sites observed in 2015 were identical to those observed in 2014 with one exception. One interstate highway site had been problematic in the past. Different observation points for the site had been used each of the previous three years, but each was somewhat dangerous and difficult. There are no other good options for a primary road site in that county, so the decision was made to use another established site twice, once observing eastbound traffic and once observing westbound traffic. No new alternate sites were needed in 2015.

Materials Preparation.

After the 75 sites were finalized, CSSM staff reviewed observation forms from previous years and examined sites on maps and Google Earth to verify observation points that would be safe and still provide the visibility necessary to observe seat belt use. The Project Manager checked road construction schedules and, although construction existed in some places, there were no sites that would require an alternate location for that reason. CSSM staff prepared a series of maps for Data Collectors to use as references when traveling to sites. Department of Transportation maps, Google maps, and city maps all served as effective resources.

Equipment was procured for use by the Data Collectors, including vests, hats, warning lights, signs, stop watches, and clickers. Data Collection schedules were prepared for each Data Collector and administrative procedures were documented.

Notification.

Prior to the data collection process, the GTSB representative notified law enforcement personnel in each of the site areas. CSSM staff notified other appropriate city/county and Department of Transportation personnel. The purpose was to ensure that the appropriate people in each site area would be aware of the project and the days and times that Data Collectors would be at work in their area.

Data Collection Staff Training

Iowa utilized four data collectors in 2015, responsible for 3-4 counties each. All four data collectors were experienced, having worked as data collectors for the project in the past. The primary Quality Control Monitor from 2013 and 2014 originally planned to fulfill that role again in 2015 but shortly before data collection was forced to cancel due to family reasons. As a result, the survey unit director and project manager served as Quality Control Monitors, dividing the work between them.

Because all staff was experienced, training was conducted in one day rather than two days. Training was held at CSSM facilities on June 8, 2015, with field data collection beginning on June 9, 2015. The training included a combination of lecture, classroom and field exercises. Training sessions covered data collection protocols, including how to find the observation sites, choosing an observation location, how to properly collect data, practice in what counts as “use,” “nonuse,” and “use unknown” regarding belt use, what to do if data cannot be collected at a site due to road construction, weather, or other circumstances, and the appropriate management and submission of collected data. In the past, roadside safety training has been provided by the Safety Circuit Rider at Iowa State University’s Institute for Transportation (*InTrans*). The *InTrans* Safety Circuit Rider position was vacant at the time of 2015 training, so roadside safety was addressed by the survey unit director using materials provided in previous years by the *InTrans* Safety Circuit Rider. The 2015 training syllabus is shown in Figure 1.

The QC Monitors (the project manager and survey unit director) reviewed the specific duties of the position. Quality Control duties included conducting unannounced site visits to a minimum of two sites for each Data Collector (11% of the total sites) and reviewing the Data Collector’s field protocol. The QC Monitors met with the Data Collectors in the field to answer questions and offer assistance as needed.

Data Collectors were provided with bright yellow vests and hats to wear for safety and protection from sun and light rain. Each Data Collector also had a flashing yellow light to put on his/her car and a clicker-counter and stop watch to use as needed. New “Survey Crew Ahead” signs and sandbag weights were purchased for use in high speed areas and other sites as appropriate.

Figure 1.

Seat Belt Data Collectors 2015 Training Agenda	
Seat Belt Survey Overview	
Study Design	
NHTSA Requirements	
Data Collection Requirements	
Definitions of terms	
Data Collection Procedures	
Assignments & Rescheduling	
Site Locations	
Low/High volume roadways	
Locating assigned sites	
Site assignment sheets & maps	
Data Collection	
Data Collection & Observation forms	
Recording alternate site information	
Traffic Counts	
Recording observations	
Sites on Google Earth	
Safety and Security	
Signage and visibility	
Roadway safety	
Quality Control and QC monitors	
Timesheets and expense reports	
Field Practice	
Setting up new road work signs	
Highway observations	
Debriefing	

Observation Protocols and Procedures

All passenger vehicles, including commercial vehicles weighing less than 10,000 pounds, were eligible for observation. Data Collectors completed two forms in the field, the Observation Site Form and the Observation Tally Form, which are shown in Appendix A and B. The Observation Site Form documented descriptive information about each site. Data Collectors recorded information including observation date, site location and number, alternative site data, traffic directions and lanes available and observed, start and end times for observations, and weather conditions.

The Observation Tally Form was used to mark belt use/non-use/unknown use for front drivers and passengers. Using the Observation Tally Form, seat belt use observations were made of all passenger vehicle drivers and right front seat occupants in the selected lane. The only passenger vehicle right front seat occupants excluded from the study were child passengers traveling in child seats with harness straps. If there was no passenger in the right front seat of an observed vehicle that information was also noted on the Observation Tally Form.

Seat Belt use categories - Data Collectors recorded belt use for the driver and right front seat passenger using the definitions shown in Figure 2 below, which were provided in the federal regulations.

Figure 2.

Code	Meaning	Definition
Y	Yes, belted	The shoulder belt is in front of the person's shoulder.
N	No, unbelted	The shoulder belt is not in front of the person's shoulder.
U	Unknown	It cannot reasonably be determined whether the driver or right front passenger is belted.
NP	No passenger	There is no right front passenger present.

Scheduling.

Data collectors were assigned one county with five observation sites per work day. A schedule of sites with observation start times was provided by the office in order to ensure a representative sampling of times of day for the data collection and to allow for proper notification of county/city and law enforcement personnel. Observations were to start at the assigned times and continue for exactly 45 minutes.

Observations.

Data Collectors observed one lane and one direction of travel per observation site. The direction of travel was randomly assigned by the office; however, Data Collectors were allowed to observe the other direction if safety or windshield glare dictated. Deviations from the randomly assigned direction were noted on the Observation Site Form. If an assigned road segment included an intersection, Data Collectors were instructed to observe traffic traveling on the assigned road segment, not the cross-street.

Lower volume roadways such as county roads and streets were observed from a field drive or other location at which data collectors could safely move their vehicles from the roadway. In some cases Data Collectors observed from their vehicle while, in other cases, observing from outside of the vehicle was most effective.

Whenever possible, observations for high-volume, limited access roadways were made from an overpass. Observing from an overpass allowed for comparatively easy viewing of seatbelt use for both the driver and the passenger. Gravel road overpasses were preferred because of the low traffic volume,

reducing safety hazards to the Data Collector. In some instances observing from an overpass required moving the observation point from the specific road segment by a few miles; however, because of the limited exit and entrance to these roadways, there were no significant changes to the observed vehicles between the assigned road segment and the observation point.

If a low volume overpass was not available, Data Collectors were allowed to observe traffic at an exit ramp or rest stop. Because the exit ramp/rest stop only sampled a portion of the traffic passing on the main highway, an additional traffic volume count was required in order to adjust for the reduced numbers. Data collectors completed a traffic count of the assigned highway segment immediately following the observations at the ramp/rest stop. From a safe observation point from which to view passing cars (but not necessarily belt usage), the data collector counted passing cars in one direction and in one lane of the assigned road segment, timing the number of minutes to reach a count of 100 cars. If the traffic volume was low, the count continued for 15 minutes, at which point the data collector recorded the number of cars observed in a 15 minute time frame. This traffic count information was recorded on the Observation Site Form and was used to adjust the seat belt usage observation data when observations were made away from the selected road segment at a rest stop or exit ramp. Only one rest stop site was used in 2015.

Alternate Sites.

If locating a useable and safe place to observe required the Data collector to deviate farther than 2 miles (or more than one block in city situations) from the selected road segment, he/she was instructed to call the office before proceeding and to note the location as an alternate site on the Observation Site form. For the 2015 data collection, there were no new alternate sites needed unexpectedly. The only change from 2014 was planned prior to data collection as described on page 3. One interstate highway site had been problematic in the past. Different observation points had been used each of the previous three years, but each was somewhat dangerous and difficult. There are no other good options for a primary road site in that county, so the decision was made to use another established site twice, once observing eastbound traffic and once observing westbound traffic.

Rescheduling.

If an assigned road segment was temporarily unavailable due to a traffic accident or inclement weather, data collection was to be rescheduled another week for the same time and day of the week. There was quite a bit of intermittent light rain and drizzle during the observation week, however no observation periods were cancelled due to weather. One observation period was rained out in the morning but was completed later on the same day

Results

Data collection for 2015 occurred from Tuesday, June 9, through Monday, June 15, 2015. The 2015 seat belt use data collection resulted in the observation of **13,342 passenger vehicles**, with a right front seat passenger in 4,733 of those vehicles, for a total of **18,075 potential observations** of belt use. Of these 18,075 potential observations, there were 12,304 drivers and 4,286 right front passengers who were observed to be wearing seat belts (total 16,590 seat belt users). Seat belts were not worn by 672 drivers and 301 right front passengers (total 973 unbelted). Data collectors were unable to observe the seat belt use of 366 drivers and 146 passengers (total 512 unknown use). The unknown use, or **“nonresponse rate,” is .0283 or 2.83%**. This is well within the range allowed by federal regulations, which require the nonresponse rate to be below 10%.

The number of observations in 2015 is very similar to 2014. The number of cars observed is slightly higher in 2015 but with fewer right front passengers. The number of total observations is also higher (18,075 compared to 17,568 in 2014). Federal regulations require a minimum of 7500 observations, and the 2015 total of 13,342 passenger vehicles with 18,075 observed occupants far exceeds the minimum. Each data collector was observed by a quality control monitor at two unannounced sites to ensure compliance with project protocols. This comprises 10.7% of the sites (8 out of 75), which exceeds the minimum of 5% required by federal regulations.

Federal regulations require the calculation of seat belt use to be conducted with weighted data as described in the approved survey plan. Based on the weighted data, **Iowa’s overall seat belt use rate for 2015 is 92.96%**, with an estimated standard error of 0.0054 ($\pm 1\%$). This is very consistent with the 2014 seat belt use rate of 92.80%.

Tables and Appendices

Table 1 lists the 75 observation sites with selected characteristics and the number of belted drivers and right front passengers.

Tables 2 and 3 show the seat belt use of drivers and passengers by county. Table 2 contains the number or count of each category of belt use by drivers, passengers, and total for each sampled county. Table 3 contains two types of unweighted percentages of belt use for drivers, passengers, and combined total for each county. The “% of Total Belted” is the percent of the total number of persons (both drivers and passengers) who were belted. The “% of Known Belted” removes the persons with unknown belt use from the base number, so it becomes the percent of persons with known seat belt status who were belted. Note that these percentages are unweighted and the state-wide seat belt use percentage is slightly different than the weighted seat belt use percentage required by federal regulations for reporting. Nevertheless the unweighted percentages in Table 3 enable legitimate comparisons between seat belt users/nonusers and between counties.

Tables 4 and 5 show the seat belt use of drivers and passengers by road type. Table 4 contains the number in each category and Table 5 contains unweighted percentages. Federal regulations required the new survey plan to classify road types as primary (including interstates), secondary, and local.

Table 6 contains seat belt use of drivers and passengers by day of the week and road type. The percentages included in the table are unweighted.

Table 7 contains seat belt use of drivers and passengers by time of day and road type. The percentages included in the table are unweighted.

Table 8 contains sample weights for each observation site as well as seat belt use for drivers and passengers (number or count). This information is used for Part B reporting purposes.

Appendix A. Observation Site Form

Appendix B. Observation Tally Form

Table 1. 2015 Seat Belt Usage

No.	County	MSLINK	Location	Road Type	Day	Start Time	Vehicle Count	Drivers Belted	Right Front Passenger Count	Right Front Passenger Belted
1	Black Hawk	15146	Logan Ave	Secondary	Sat	11:00 AM	181	159	79	70
2	Black Hawk	19553	Wagner Rd	Local	Sat	12:00 PM	68	57	23	21
3	Black Hawk	20423	W 4th St	Secondary	Sat	1:52 PM	132	110	45	37
4	Black Hawk	14934	US 20	Secondary	Sat	3:20 PM	415	356	213	189
5	Black Hawk	14766	I-380/Hwy 27	Primary	Sat	5:02 PM	227	202	156	136
6	Grundy	104904	IA 57/110th	Secondary	Fri	9:02 AM	41	36	4	2
7	Grundy	309294	US 20	Secondary	Fri	10:22 AM	238	214	105	85
8	Grundy	104906	Hwy 175/240th St	Secondary	Fri	12:04 PM	33	29	11	10
9	Grundy	104947	Hwy 175/260th/Grundy Ave	Secondary	Fri	1:56 PM	51	40	5	4
10	Grundy	105710	Blackhawk St	Local	Fri	3:01 PM	41	28	7	6
11	Hardin	113806	US-65	Secondary	Thurs	8:50 AM	30	28	7	7
12	Hardin	115349	Washington Ave/Old US 20	Local	Thurs	9:58 AM	147	121	38	31
13	Hardin	113774	US-65	Secondary	Thurs	11:27 AM	84	73	31	24
14	Hardin	317413	US-20	Secondary	Thurs	1:29 PM	172	145	62	56
15	Hardin	332704	E Main St	Local	Thurs	2:45 PM	13	10	1	1
16	Howard	123235	US 63	Secondary	Sun	10:01 AM	54	50	34	29
17	Howard	123337	IA 9	Secondary	Sun	11:05 AM	72	61	37	32
18	Howard	123901	N Elm St	Local	Sun	12:54 PM	57	42	20	15
19	Howard	123646	Oak Ave	Local	Sun	2:40 PM	17	14	5	5
20	Howard	123218	US 63	Secondary	Sun	4:07 PM	81	71	49	38
21	Iowa	128308	IA 212/Western Ave	Secondary	Fri	8:30 AM	128	115	36	35
22	Iowa	128184	I-80	Primary	Fri	10:00 AM	256	244	142	131
23	Iowa	128805	U Ave	Local	Fri	11:20 AM	5	5	2	2
24	Iowa	128271	I-80	Primary	Fri	1:15 PM	320	306	167	159
25	Iowa	128271	I-80	Primary	Fri	2:10 PM	348	341	203	195
26	Johnson	142458	Co Rd F28/ Mehaffey Bridge Rd	Local	Tues	9:00 AM	49	48	13	11
27	Johnson	140584	I 80	Primary	Tues	10:15 AM	175	171	57	52
28	Johnson	140747	I 80	Primary	Tues	11:40 AM	211	205	103	95
29	Johnson	143552	N Dubuque St	Secondary	Tues	1:35 PM	96	95	22	21
30	Johnson	141004	US 218/IA 27	Secondary	Tues	2:50 PM	310	300	121	118
31	Linn	166008	16th Ave SW	Secondary	Mon	7:15 AM	202	193	28	27
32	Linn	161809	32nd St, NE, Cedar Rapids	Secondary	Mon	8:40 AM	185	178	26	24
33	Linn	164085	Center Point Rd	Secondary	Mon	10:00 AM	125	117	28	27
34	Linn	158613	I 380/Hwy 27	Primary	Mon	11:15 AM	291	287	101	93
35	Linn	160569	Co Rd D62/Coggon Rd	Local	Mon	1:15 PM	9	9	3	3
36	Marion	180068	IA 163	Secondary	Mon	12:15 PM	207	189	66	61
37	Marion	180790	Co Rd G28/Washington St	Local	Mon	1:15 PM	60	55	16	16
38	Marion	181891	S Clark St	Local	Mon	2:45 PM	226	199	41	40
39	Marion	179982	IA 92	Secondary	Mon	4:00 PM	77	74	19	19
40	Marion	179837	IA 5	Secondary	Mon	5:30 PM	111	98	30	29
41	Polk	215201	I 35	Primary	Thurs	12:15 PM	411	387	131	115
42	Polk	215390	I 235	Primary	Thurs	7:20 AM	1069	1012	100	93
43	Polk	227016	University Ave	Secondary	Thurs	8:40 AM	133	126	30	28
44	Polk	226230	109th St	Local	Thurs	10:00 AM	82	73	10	8
45	Polk	216760	IA 141	Secondary	Thurs	1:45 PM	360	333	139	131
46	Pottawattamie	233075	S 10th St	Local	Sun	10:30 AM	19	17	5	3
47	Pottawattamie	229603	W Broadway	Secondary	Sun	12:15 PM	229	196	96	78
48	Pottawattamie	229164	I 80	Primary	Sun	1:20 PM	636	598	347	311
49	Pottawattamie	334415	I 29	Primary	Sun	3:00 PM	417	399	270	250
50	Pottawattamie	229207	I 80	Primary	Sun	4:35 PM	309	304	208	191
51	Scott	242971	I 80	Primary	Wed	11:00 AM	236	228	110	104
52	Scott	243108	I 80	Primary	Wed	1:00 PM	18	16	6	6
53	Scott	248805	Valley Dr	Local	Wed	2:05 PM	44	39	13	12
54	Scott	247785	Eastern Ave	Secondary	Wed	3:45 PM	286	272	57	47
55	Scott	246517	E 53rd St	Secondary	Wed	4:45 PM	401	380	94	88
56	Shelby	249972	Co Rd F58	Local	Mon	9:30 AM	7	5	1	1
57	Shelby	249594	US 59	Secondary	Mon	10:55 AM	104	96	39	34
58	Shelby	250640	19th St	Local	Mon	3:30 PM	48	42	12	11
59	Shelby	250675	12th St/Linden Rd	Secondary	Mon	1:24 PM	104	89	25	18
60	Shelby	249736	IA-44/1000th St	Secondary	Mon	2:30 PM	32	28	5	5
61	Story	257296	Lincoln Way	Secondary	Wed	7:30 AM	181	165	35	30
62	Story	257855	University Blvd	Secondary	Wed	8:30 AM	272	255	81	77
63	Story	255469	I-35	Primary	Wed	9:45 AM	459	413	134	127
64	Story	256910	Co Rd E29/190th St	Local	Wed	12:00 PM	43	37	10	9
65	Story	255562	I-35	Primary	Wed	1:30 PM	343	321	132	122
66	Warren	273908	I-35	Primary	Tues	9:15 AM	154	145	51	45
67	Warren	334871	I-35	Primary	Tues	10:34 AM	205	185	101	88
68	Warren	275330	S 5th St	Local	Tues	12:39 PM	60	51	14	9
69	Warren	274137	US 65/69	Secondary	Tues	1:54 PM	289	268	81	72
70	Warren	311642	IA-5	Secondary	Tues	3:15 PM	554	495	119	102
71	Webster	283317	Co P70/Taylor Ave	Local	Sat	9:45 AM	22	20	8	8
72	Webster	283683	Co D20/200th St	Local	Sat	12:00 PM	61	53	31	27
73	Webster	311763	2nd Ave N	Secondary	Sat	1:45 PM	45	40	11	11
74	Webster	283806	Old Hwy 20/ Co D20	Secondary	Sat	3:00 PM	113	97	51	49
75	Webster	283076	IA 7/190th St	Secondary	Sat	4:15 PM	51	44	20	20
TOTALS							13342	12304	4733	4286

Table 2. 2015 Driver and Passenger Seat Belt Use by County (n)

County	Drivers				Right Front Passengers				TOTAL			
	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known	Total	Belted	Not Belted	Un-known
Black Hawk	1023	884	75	64	516	453	29	34	1539	1337	104	98
Grundy	404	347	33	24	132	107	10	15	536	454	43	39
Hardin	446	377	38	31	139	119	5	15	585	496	43	46
Howard	281	238	25	18	145	119	15	11	426	357	40	29
Iowa	1057	1011	19	27	550	522	20	8	1607	1533	39	35
Johnson	841	819	7	15	316	297	16	3	1157	1116	23	18
Linn	812	784	20	8	186	174	8	4	998	958	28	12
Marion	681	615	48	18	172	165	6	1	853	780	54	19
Polk	2055	1931	89	35	410	375	29	6	2465	2306	118	41
Pottawattamie	1610	1514	69	27	926	833	81	12	2536	2347	150	39
Scott	985	935	43	7	280	257	16	7	1265	1192	59	14
Shelby	295	260	31	4	82	69	8	5	377	329	39	9
Story	1298	1191	68	39	392	365	20	7	1690	1556	88	46
Warren	1262	1144	72	46	366	316	34	16	1628	1460	106	62
Webster	292	254	35	3	121	115	4	2	413	369	39	5
Total	13342	12304	672	366	4733	4286	301	146	18075	16590	973	512

Table 3. 2015 Driver and Passenger Seat Belt Use by County (unweighted percentages)

County	Drivers		Right Front Passengers		TOTAL	
	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted
Black Hawk	86.4%	92.2%	87.8%	94.0%	86.9%	92.8%
Grundy	85.9%	91.3%	81.1%	91.5%	84.7%	91.3%
Hardin	84.5%	90.8%	85.6%	96.0%	84.8%	92.0%
Howard	84.7%	90.5%	82.1%	88.8%	83.8%	89.9%
Iowa	95.6%	98.2%	94.9%	96.3%	95.4%	97.5%
Johnson	97.4%	99.2%	94.0%	94.9%	96.5%	98.0%
Linn	96.6%	97.5%	93.5%	95.6%	96.0%	97.2%
Marion	90.3%	92.8%	95.9%	96.5%	91.4%	93.5%
Polk	94.0%	95.6%	91.5%	92.8%	93.5%	95.1%
Pottawattamie	94.0%	95.6%	90.0%	91.1%	92.5%	94.0%
Scott	94.9%	95.6%	91.8%	94.1%	94.2%	95.3%
Shelby	88.1%	89.3%	84.1%	89.6%	87.3%	89.4%
Story	91.8%	94.6%	93.1%	94.8%	92.1%	94.6%
Warren	90.6%	94.1%	86.3%	90.3%	89.7%	93.2%
Webster	87.0%	87.9%	95.0%	96.6%	89.3%	90.4%
Total	92.2%	94.8%	90.6%	93.4%	91.8%	94.5%

Table 4. 2015 Seat Belt Use by Road Type (n)

Road Type	Drivers				Right Front Passengers				Total			
	Total	Belted	Not Belted	Un-Known	Total	Belted	Not Belted	Un-Known	Total	Belted	Not Belted	Un-Known
Local	1078	925	119	34	273	239	21	13	1351	1164	140	47
Primary	6085	5764	177	144	2519	2313	153	53	8604	8077	330	197
Secondary	6179	5615	376	188	1941	1734	127	80	8120	7349	503	268
TOTAL	13342	12304	672	366	4733	4286	301	146	18075	16590	973	512

Table 5. 2015 Seat Belt Use by Road Type (unweighted percentages)

Road Type	Drivers		Right Front Passengers		TOTAL	
	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted	% of Total Belted	% of Known Belted
Local	85.8%	88.6%	87.5%	91.9%	86.2%	89.3%
Primary	94.7%	97.0%	91.8%	93.8%	93.9%	96.1%
Secondary	90.9%	93.7%	89.3%	93.2%	90.5%	93.6%
TOTAL	92.2%	94.8%	90.6%	93.4%	91.8%	94.5%

Table 6. 2015 Driver and Passenger Seat Belt Use by Day of Week and Road Type (n & unweighted %)

	Drivers Belted	Total Drivers	Passengers Belted	Total Passengers	% Drivers Belted	% Passengers Belted
Sunday	1752	1891	952	1071	92.6%	88.9%
Local	73	93	23	30	78.5%	76.7%
Primary	1301	1362	752	825	95.5%	91.2%
Secondary	378	436	177	216	86.7%	81.9%
Monday	1659	1788	408	440	92.8%	92.7%
Local	310	350	71	73	88.6%	97.3%
Primary	287	291	93	101	98.6%	92.1%
Secondary	1062	1147	244	266	92.6%	91.7%
Tuesday	1963	2103	613	682	93.3%	89.9%
Local	99	109	20	27	90.8%	74.1%
Primary	706	745	280	312	94.8%	89.7%
Secondary	1158	1249	313	343	92.7%	91.3%
Wednesday	2126	2283	622	672	93.1%	92.6%
Local	76	87	21	23	87.4%	91.3%
Primary	978	1056	359	382	92.6%	94.0%
Secondary	1072	1140	242	267	94.0%	90.6%
Thursday	2308	2501	494	549	92.3%	90.0%
Local	204	242	40	49	84.3%	81.6%
Primary	1399	1480	208	231	94.5%	90.0%
Secondary	705	779	246	269	90.5%	91.4%
Friday	1358	1461	629	682	93.0%	92.2%
Local	33	46	8	9	71.7%	88.9%
Primary	891	924	485	512	96.4%	94.7%
Secondary	434	491	136	161	88.4%	84.5%
Saturday	1138	1315	568	637	86.5%	89.2%
Local	130	151	56	62	86.1%	90.3%
Primary	202	227	136	156	89.0%	87.2%
Secondary	806	937	376	419	86.0%	89.7%
Total	12304	13342	4286	4733	92.2%	90.6%

Table 7. Driver and Passenger Seat Belt Use by Time of Day and Road Type (n & unweighted %)

	Drivers Belted	Total Drivers	Passengers Belted	Total Passengers	% Drivers Belted	% Passengers Belted
7AM to 759AM	1370	1452	150	163	94.4%	92.0%
Primary	1012	1069	93	100	94.7%	93.0%
Secondary	358	383	57	63	93.5%	90.5%
8AM to 859AM	370	400	112	117	92.5%	95.7%
Secondary	370	400	112	117	92.5%	95.7%
9AM to 959AM	566	599	118	132	94.5%	89.4%
Local	53	56	12	14	94.6%	85.7%
Primary	145	154	45	51	94.2%	88.2%
Secondary	368	389	61	67	94.6%	91.0%
10AM to 1059AM	1625	1782	589	662	91.2%	89.0%
Local	231	270	50	61	85.6%	82.0%
Primary	1013	1095	398	434	92.5%	91.7%
Secondary	381	417	141	167	91.4%	84.4%
11AM to 1159AM	909	973	359	399	93.4%	90.0%
Local	5	5	2	2	100.0%	100.0%
Primary	515	527	197	211	97.7%	93.4%
Secondary	389	441	160	186	88.2%	86.0%
12PM to 1259PM	1153	1263	416	471	91.3%	88.3%
Local	147	172	57	64	85.5%	89.1%
Primary	592	622	210	234	95.2%	89.7%
Secondary	414	469	149	173	88.3%	86.1%
1PM to 159PM	1727	1875	736	814	92.1%	90.4%
Local	157	186	43	53	84.4%	81.1%
Primary	1241	1317	598	652	94.2%	91.7%
Secondary	329	372	95	109	88.4%	87.2%
2PM to 259PM	1199	1301	467	502	92.2%	93.0%
Local	39	44	12	13	88.6%	92.3%
Primary	341	348	195	203	98.0%	96.1%
Secondary	819	909	260	286	90.1%	90.9%
3PM to 359PM	1940	2154	771	840	90.1%	91.8%
Local	293	345	63	66	84.9%	95.5%
Primary	399	417	250	270	95.7%	92.6%
Secondary	1248	1392	458	504	89.7%	90.9%
4PM to 459PM	765	804	315	353	95.1%	89.2%
Primary	304	309	191	208	98.4%	91.8%
Secondary	461	495	124	145	93.1%	85.5%
5PM to 559PM	680	739	253	280	92.0%	90.4%
Primary	202	227	136	156	89.0%	87.2%
Secondary	478	512	117	124	93.4%	94.4%
Grand Total	12304	13342	4286	4733	92.2%	90.6%

Table 8. Sample Weights and Seat Belt Use by Observation Site: Part B Reporting Data (n)

Site ID	Site Type	Date Observed	Sample Weight	Number of Drivers	Number of Front Passengers	Number of Occupants Belted	Number of Occupants Unbelted	Number of Occupants Unknown Belt Use
101	Original	6/13/2015	193.41	181	79	229	15	16
102	Original	6/13/2015	479.81	68	23	78	7	6
103	Original	6/13/2015	586.13	132	45	147	17	13
104	Original	6/13/2015	98.93	415	213	545	44	39
105	Original	6/13/2015	26.78	227	156	338	21	24
106	Original	6/12/2015	355.30	41	4	38	4	3
107	Original	6/12/2015	73.58	238	105	299	18	26
108	Original	6/12/2015	585.00	33	11	39	3	2
109	Original	6/12/2015	3433.68	51	5	44	8	4
110	Original	6/12/2015	11996.92	41	7	34	10	4
111	Original	6/11/2015	522.63	30	7	35	0	2
112	Original	6/11/2015	1191.72	147	38	152	20	13
113	Original	6/11/2015	138.30	84	31	97	7	11
114	Original	6/11/2015	112.08	172	62	201	14	19
115	Original	6/11/2015	15849.14	13	1	11	2	1
116	Original	6/14/2015	237.70	54	34	79	4	5
117	Original	6/14/2015	217.46	72	37	93	8	8
118	Original	6/14/2015	1266.66	57	20	57	15	5
119	Original	6/14/2015	3435.69	17	5	19	2	1
120	Original	6/14/2015	3026.32	81	49	109	11	10
121	Original	6/12/2015	2179.21	128	36	150	11	3
122	Original	6/12/2015	366.90	256	142	375	9	14
123	Alternate	6/12/2015	207.00	320	167	465	10	12
124	Original	6/12/2015	3065.24	5	2	7	0	0
125	Original	6/12/2015	30.88	348	203	536	9	6
126	Original	6/9/2015	394.31	49	13	59	3	0
127	Original	6/9/2015	279.68	175	57	223	4	5
128	Original	6/9/2015	37.27	211	103	300	10	4
129	Original	6/9/2015	1396.63	96	22	116	1	1
130	Original	6/9/2015	47.33	310	121	418	5	8
131	Original	6/15/2015	1798.56	9	3	12	0	0
132	Original	6/15/2015	89.02	291	101	380	7	5
133	Original	6/15/2015	207.73	125	28	144	8	1
134	Original	6/15/2015	134.79	185	26	202	8	1
135	Original	6/15/2015	2150.54	202	28	220	5	5
136	Original	6/15/2015	300.82	207	66	250	15	8
137	Original	6/15/2015	1412.11	60	16	71	4	1
138	Original	6/15/2015	948.74	226	41	239	22	6
139	Original	6/15/2015	364.32	77	19	93	3	0

Site ID	Site Type	Date Observed	Sample Weight	Number of Drivers	Number of Front Passengers	Number of Occupants Belted	Number of Occupants Unbelted	Number of Occupants Unknown Belt Use
140	Original	6/15/2015	336.06	111	30	127	10	4
141	Original	6/11/2015	48.66	411	131	502	29	11
142	Original	6/11/2015	173.04	1069	100	1105	46	18
143	Original	6/11/2015	645.16	360	139	464	27	8
144	Original	6/11/2015	3355.70	133	30	154	9	0
145	Original	6/11/2015	1557.63	82	10	81	7	4
146	Original	6/14/2015	184.11	229	96	274	47	4
147	Original	6/14/2015	129.26	309	208	495	20	2
148	Original	6/14/2015	109.01	636	347	909	45	29
149	Original	6/14/2015	107.62	417	270	649	34	4
150	Original	6/14/2015	1691.26	19	5	20	4	0
151	Original	6/10/2015	98.88	236	110	332	7	7
152	Original	6/10/2015	186.95	18	6	22	2	0
153	Original	6/10/2015	2137.26	44	13	51	6	0
154	Original	6/10/2015	245.46	286	57	319	19	5
155	Original	6/10/2015	121.19	401	94	468	25	2
156	Original	6/15/2015	4756.24	7	1	6	1	1
157	Original	6/15/2015	174.75	104	39	130	9	4
158	Original	6/15/2015	409.31	104	25	107	18	4
159	Original	6/15/2015	635.98	48	12	53	7	0
160	Original	6/15/2015	642.39	32	5	33	4	0
161	Original	6/10/2015	144.35	181	35	195	15	6
162	Original	6/10/2015	1611.91	272	81	332	15	6
163	Original	6/10/2015	22.80	459	134	540	30	23
164	Original	6/10/2015	652.08	43	10	46	6	1
165	Original	6/10/2015	100.89	343	132	443	22	10
166	Original	6/9/2015	44.51	154	51	190	9	6
167	Original	6/9/2015	893.61	205	101	273	16	17
168	Original	6/9/2015	101.84	289	81	340	18	12
169	Original	6/9/2015	517.62	60	14	60	12	2
170	Original	6/9/2015	762.34	554	119	597	51	25
171	Original	6/13/2015	269.05	51	20	64	6	1
172	Original	6/13/2015	387.82	113	51	146	16	2
173	Original	6/13/2015	3011.74	45	11	51	5	0
174	Original	6/13/2015	1245.25	61	31	80	10	2
175	Original	6/13/2015	1128.81	22	8	28	2	0
TOTALS				13342	4733	16590	973	512

Appendix A. Observation Site Form 2015

Iowa Seat Belt Survey
Observation Site Form

Data Collector ID# _____

Date: ____ / ____ / 2015

Site Identification:

ID: _____

County : _____

Road Name: _____

Co Site #: _____

Site Start and End Time:

Start time for observations: _____ am/pm

End time for observations: _____ am/pm

(Total observation period MUST last exactly 45 minutes)

Site Description:

Selected traffic flow direction: North South East West

Total number of lanes in selected direction: _____

Weather Conditions: Clear Cloudy/PC Light Fog Light Rain

Alternate Site Information:

Is this an alternate site (not including a recommended observation point)?

No

Yes

If yes, why was an alternate site needed?

Traffic Count:

Is a traffic count required
(exit ramp or rest stop)?

No

Yes

If yes,

Number of Cars: _____

Duration: _____

Appendix B. Observation Tally Form 2015

Iowa Seat Belt Survey – Observation Form

County: _____

Page ____ of ____

County site #: _____

ID #: _____

Data Collector ID# _____

Responses: Y = Yes, N = No, U = Unknown, NP = No Passenger

VEHICLE NUMBER	DRIVER SEATBELT USE			PASSENGER SEATBELT USE			
1	Y	N	U	Y	N	U	NP
2	Y	N	U	Y	N	U	NP
3	Y	N	U	Y	N	U	NP
4	Y	N	U	Y	N	U	NP
5	Y	N	U	Y	N	U	NP
6	Y	N	U	Y	N	U	NP
7	Y	N	U	Y	N	U	NP
8	Y	N	U	Y	N	U	NP
9	Y	N	U	Y	N	U	NP
10	Y	N	U	Y	N	U	NP
11	Y	N	U	Y	N	U	NP
12	Y	N	U	Y	N	U	NP
13	Y	N	U	Y	N	U	NP
14	Y	N	U	Y	N	U	NP
15	Y	N	U	Y	N	U	NP
16	Y	N	U	Y	N	U	NP
17	Y	N	U	Y	N	U	NP
18	Y	N	U	Y	N	U	NP
19	Y	N	U	Y	N	U	NP
20	Y	N	U	Y	N	U	NP
21	Y	N	U	Y	N	U	NP
22	Y	N	U	Y	N	U	NP
23	Y	N	U	Y	N	U	NP
24	Y	N	U	Y	N	U	NP
25	Y	N	U	Y	N	U	NP
26	Y	N	U	Y	N	U	NP
27	Y	N	U	Y	N	U	NP
28	Y	N	U	Y	N	U	NP
29	Y	N	U	Y	N	U	NP
30	Y	N	U	Y	N	U	NP
31	Y	N	U	Y	N	U	NP
32	Y	N	U	Y	N	U	NP
33	Y	N	U	Y	N	U	NP
34	Y	N	U	Y	N	U	NP
35	Y	N	U	Y	N	U	NP
36	Y	N	U	Y	N	U	NP
37	Y	N	U	Y	N	U	NP
38	Y	N	U	Y	N	U	NP
39	Y	N	U	Y	N	U	NP
40	Y	N	U	Y	N	U	NP

VEHICLE NUMBER	DRIVER SEATBELT USE			PASSENGER SEATBELT USE			
41	Y	N	U	Y	N	U	NP
42	Y	N	U	Y	N	U	NP
43	Y	N	U	Y	N	U	NP
44	Y	N	U	Y	N	U	NP
45	Y	N	U	Y	N	U	NP
46	Y	N	U	Y	N	U	NP
47	Y	N	U	Y	N	U	NP
48	Y	N	U	Y	N	U	NP
49	Y	N	U	Y	N	U	NP
50	Y	N	U	Y	N	U	NP
51	Y	N	U	Y	N	U	NP
52	Y	N	U	Y	N	U	NP
53	Y	N	U	Y	N	U	NP
54	Y	N	U	Y	N	U	NP
55	Y	N	U	Y	N	U	NP
56	Y	N	U	Y	N	U	NP
57	Y	N	U	Y	N	U	NP
58	Y	N	U	Y	N	U	NP
59	Y	N	U	Y	N	U	NP
60	Y	N	U	Y	N	U	NP
61	Y	N	U	Y	N	U	NP
62	Y	N	U	Y	N	U	NP
63	Y	N	U	Y	N	U	NP
64	Y	N	U	Y	N	U	NP
65	Y	N	U	Y	N	U	NP
66	Y	N	U	Y	N	U	NP
67	Y	N	U	Y	N	U	NP
68	Y	N	U	Y	N	U	NP
69	Y	N	U	Y	N	U	NP
70	Y	N	U	Y	N	U	NP
71	Y	N	U	Y	N	U	NP
72	Y	N	U	Y	N	U	NP
73	Y	N	U	Y	N	U	NP
74	Y	N	U	Y	N	U	NP
75	Y	N	U	Y	N	U	NP
76	Y	N	U	Y	N	U	NP
77	Y	N	U	Y	N	U	NP
78	Y	N	U	Y	N	U	NP
79	Y	N	U	Y	N	U	NP
80	Y	N	U	Y	N	U	NP